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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/459,240	12/10/1999	HAMID BACHA	CA9-98-040	9886

7590 09/24/2004
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EXAMINER

KIM, JUNG W

ART UNIT PAPER NUMBER

2132

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/459,240

Applicant(s)

BACHA ET AL.

Examiner

Jung W Kim

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-12,14 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,3,4,6-12,14,17,18 and 20 is/are rejected.
- 7) ☐ Claim(s) 19 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The After Final amendment received by the applicant on August 17, 2004 is based on a typographical error of the previous Office Action mailed on July 27, 2004: paragraph 23 of the previous Office Action incorrectly identifies claims 19 and 20 as objected claims containing allowable subject matter. Paragraph 23 should have indicated that claims 19 and 21 are objected. As specified elsewhere in the previous Office Action and related papers, claim 20 is correctly identified as rejected under 35 U.S.C. 103(a) as being unpatentable over Frisch in view of Garfinkel in the claim rejection header on paragraph 10, first line, and in the detailed claim rejection on paragraph 21; also, the related previous Office Action Summary Form No. 326 explicitly indicates claim 20 as a rejected claim and 21 as an objected claim (see (6) and (7)). As such, the finality of the previous action is withdrawn to correct that typographic error. However, this action is made Final. The amendment filed on August 17, 2004 has not been entered as the amendment is based on the aforementioned inconsistencies. Applicant's period for response begins anew with the mailing of this action.

Response to Arguments

2. The following is a response to the applicant's arguments on pages 15-20 of the amendment filed on August 17, 2004, listed under the section headed 'Remarks/Arguments'.

3. Regarding Applicant's arguments that that Garfinkel teaches "that materials resident in an NFS system are not too secure and recommends that if concerns about security are paramount perhaps the user should not use NFS" and hence teaches away from a secure system (see amendment, page 17, line 8), examiner points out that Garfinkel also teaches modes to improve NFS security to implement a more secure system. Page 267, 'Improving Basic NFS Security' and page 269, last sentence, 'Summary: Security Implications of NFS'. In addition, the latter disclosure is a secure implementation of NFS widely used and known to one of ordinary skill in the art.

4. Regarding Applicant's argument that Garfinkel does not teach restricting the access set forth in the Frisch reference of a repository administrator to a directory of authorized users for data stored in the repository (see amendment, page 17, lines 10-19), the examiner disagrees. Garfinkel expressly states that only the owner of a file and the superuser of the local system can change access to the file. See Garfinkel, page 64, 3rd paragraph. Further, the obvious construction as defined in the 103(a) claim 1 rejection of the previous office action and reiterated below clearly distinguishes the superuser of the depositor computer having nobody privileges due to the restrictions placed by an NFS mounted system. See Garfinkel, page 266, 'AUTH_UNIX Authentication', 2nd paragraph.

5. As such, all claims are covered by the prior art of record.

Claim Objections

6. Claims 1, 3, 19, and 20 are objected to because of the following informalities: in claim 1, the phrase "records the user access privileges" should read "records of the user access privileges" (see amendment, page 4, 2nd line); in claim 3, the claim references canceled claim 13: the claim should reference claim 1; in claim 19, the claim refers to the computer program of claim 18, however, the invention claimed in claim 18 is a process; in claim 20, the sentence is not grammatical. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 17 recites the limitations "the vault of the document originator" in line 1, "the vault of the repository administrator" in line 3, and "the vault of a requesting user" in line 7. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 3, 4, 6-12, 14, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frisch Essential System Administration 2nd Edition (hereinafter Frisch) in view of Garfinkel Practical UNIX Security (hereinafter Garfinkel). As per claim 1, Frisch teaches a UNIX file access system with the following components:

- a. a manifest for an electronic data file listing access controls for the electronic data file (see Frisch, pages 234-236, 'Access Control Lists');
- b. a first record of a first user computer's access privileges to the electronic data file (see Frisch, pages 24-36, 'Files', especially pages 27-30, 'File Protection');
- c. means to communicate changes to the manifest affecting the first user computer's access privileges to the electronic data file for updating the first record (see Frisch, pages 27-32, 'File Protection'; page 237, 1st-3rd paragraph);
- d. means to verify the first user computer's access privileges to the electronic data file before the electronic data file is released to the first user (see Frisch, page 236, 4th paragraph).

In addition, Frisch teaches the Network File System (NFS) for distributed computing, which enables users situated at one computer to access a file system stored on a separate computer (see Frisch, page 607, 'NFS and NIS'). In an example disclosed by Frisch, users and their home accounts are dispersed on several physical computers with shared files residing on a separate computer (see Frisch, page 612, 'Exporting Local Filesystems'; page 615, 3rd-6th paragraph). Inherent in this configuration is an agent program for each UNIX computer that is networked by NFS. Furthermore, since each UNIX computer has a set of UIDs and GIDs unique to the computer (see Frisch, page 144, 2nd paragraph), each user computer has an agent program with access and maintenance rights to their respective record for user computer's access privileges.

Frisch does not expressly disclose means of establishing a secure extension for each computer of a plurality of computers. However, NFS affords such a secure extension for NFS mounted filesystems. Garfinkel teaches this other property of NFS distributing computing: to maintain the security of the respective computers in a distributed NFS network, the root user (super user with UID of "0") of one computer is assigned a "nobody" account (user id of "-2") on a NFS mounted filesystem of another computer, which is given minimal to no control over the NFS mounted computer. This effectively limits the administrators control to only their particular Unix operating system (see Garfinkel, page 266, 'AUTH_UNIX Authentication', 2nd paragraph). It would be obvious to one of ordinary skill in the art at the time the invention was made for the agents of each computer to be secure extensions of their respective computer. Motivation for such an implementation enables shared filesystems across multiple

computers, while ensuring secure extensions of the respective computers in the distributed network as taught by Frisch. Hence, the following are also covered:

- e. a first agent program for a depositor computer of an electronic data file in the data repository system which first agent program is a secure extension of the depositor computer (depositor agent on an NFS mounted filesystem) and
- f. a second agent program for a first user computer with access privileges to the electronic data file which second agent program is a secure extension of the first user computer (user agent with rights expressed in the filesystem).

In addition, Frisch teaches a technique such that documents are encrypted by their owners so that administrators of the file system do not have access to these documents in the clear (see Frisch, page 209, 'Encrypting data'; page 240-241, 'Encryption'). It would be obvious to one of ordinary skill in the art at the time the invention was made to encrypt the original files. Motivation for such an implementation ensures the administrator of the filesystem does not have access to the files stored by a user as taught by Frisch. Hence, the following are also covered:

- g. electronic data files are encrypted so that an administrator of the repository system does not have access to the electronic data file in the clear (see above); and
- h. access by the repository administrator to the electronic data file are restricted (by virtue of the encryption of the document by the user).

Finally, Garfinkel teaches that only the owner of the file and the superuser of a filesystem has the ability to update the records of the user access privileges (see

Garfinkel, page 64, 'chmod: Changing a File's Permissions', 2nd sentence in the section). It would be obvious to one of ordinary skill in the art at the time the invention was made for the repository administrator's access to the records of the user access privileges to be restricted since only the owner of the file and the superuser of the filesystem housing the electronic data files can update the records as taught by Frisch. The aforementioned covers claim 1.

12. As per claim 3, Frisch covers a UNIX file access system as outlined above in the claim 1 rejection under 35 U.S.C. 103(a). In addition, changes to the manifest affecting the first user computer's access privileges to the electronic data file are communicated from the second agent program to the first user computer (see Frisch, pages 27-32, 'File Protection'; page 237, 1st-3rd paragraphs).

13. As per claim 4, Frisch covers a UNIX file access system as outlined above in the claim 3 rejection under 35 U.S.C. 103(a). The reasons disclosed in the claim 3 rejection covers a plurality of users having corresponding agent programs, whereupon each of these other agent programs for their respective user computer is responsive in the same manner as the second agent is with the first user and with the first agent program. Hence, claim 4 is covered by the teachings of Frisch.

14. As per claim 6, Frisch covers a UNIX file access system as outlined above in the claim 4 rejection under 35 U.S.C. 103(a). In addition, changes to the manifest affecting

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the second user computer's access privileges to the electronic data file are communicated from the third agent program to the second user computer (see Frisch, pages 27-32, 'File Protection'; page 237, 1st-3rd paragraphs).

15. As per claim 7, Frisch covers a UNIX file access system as outlined above in the claim 4 rejection under 35 U.S.C. 103(a). Inherent in the NFS distributed network taught by Frisch is a file server.

16. As per claim 8, Frisch covers a UNIX file access system as outlined above in the claim 4 rejection under 35 U.S.C. 103(a). Inherent in the NFS distributed network with multiple physical computers is a switching hub to receive all communications to and from the data repository system and the agent programs. The switching hub is operatively an interface between the two computers.

17. As per claim 9, Frisch covers a UNIX file access system as outlined above in the claim 8 rejection under 35 U.S.C. 103(a). In addition, Frisch teaches ways to control environmental factors to maintain physical system security (see Frisch, page 207, 3rd bullet). Hence, the interface is a secure extension of the data repository system.

18. As per claim 10, it is a method claim corresponding to claims 4 and 6-9 and it does not teach or define above the information claimed in claims 4 and 6-9. Therefore,

claim 10 is rejected as being unpatentable over Frisch in view of Garfinkel for the same reasons set forth in the rejections of claims 4 and 6-9.

19. As per claim 11, Frisch covers a UNIX file access system as outlined above in the claim 4 rejection under 35 U.S.C. 103(a). In addition, claim 11 is covered by the invention disclosed by Frisch wherein the operation of the manifest and the first record are switched.

20. As per claim 12, Frisch covers a UNIX file access system as outline above in the claim 11 rejection under 35 U.S.C. 103(a). In addition, the UNIX file access system is implemented as a software suite.

21. As per claim 14, it is an apparatus claim corresponding to claims 1 and 12, and it does not teach or define above the information claimed in claims 1 and 12. Therefore, claim 14 is rejected as being unpatentable over Frisch in view of Garfinkel for the same reasons set forth in the rejections of claims 1 and 12.

22. As per claim 18 and 20, they are claims corresponding to claims 1, 10 and 14, and they do not teach or define above the information claimed in claims 1, 10 and 14. Therefore, claims 18 and 20 are rejected as being unpatentable over Frisch in view of Garfinkel for the same reasons set forth in the rejections of claims 1, 10 and 14.

Allowable Subject Matter

23. Claim 17 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

24. Claims 19 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Telephonic Inquiry Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung W Kim whose telephone number is (703) 305-8289. The examiner can normally be reached on M-F 9:00-6:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (703) 305-1830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jung W Kim
Examiner
Art Unit 2132

Jk
September 8, 2004



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